ABSTRACT

A new method to form passivation openings in the manufacture of an integrated circuit device is achieved. The passivation openings have gradually sloping sidewalls that allow a protective tape to be completely removed without leaving adhesive residue. A semiconductor substrate is provided. A passivation layer is deposited. An organic photoresist layer is deposited overlying the passivation layer. The organic photoresist layer is patterned to expose the passivation layer in areas where passivation openings are planned. The organic photoresist layer is reflowed to create gradually sloping sidewalls on the organic photoresist layer. The passivation layer is etched through to from the passivation openings. The passivation openings are thereby formed with gradually sloping sidewalls. The organic photoresist layer is stripped away. A protective tape is applied overlying the passivation layer and the passivation openings. The protective tape is removed. The gradually sloping sidewalls on the passivation openings allow the protective tape to be completely removed without leaving adhesive residue in the manufacture of the integrated circuit device.